

REMARKS

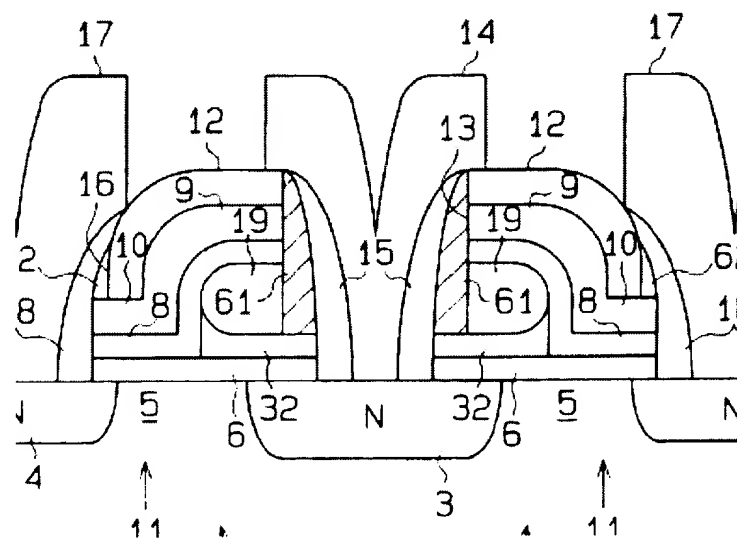
Claims 27-45 are pending and stand rejected. Claims 27, 30-31, 35, 37-42 and 44-45 have been amended to better clarify the Applicants' invention. Reconsideration is respectfully requested.

1. Rejection of Claims 27-30, 37 and 39-41 Under § 102(b)

Claims 27-30, 37 and 39-41 stand rejected under 35 U.S.C. 102(b) as being anticipated by USP 5,939,749 (Taketa).

Amended claim 27 recites that the source region has a lower portion (that is disposed vertically over the first region and lateral adjacent to and insulated from the floating gate) and an upper portion (that extends up and over the floating gate and terminates in a first end that is disposed vertically over and insulated from the floating gate). The control gate has a first portion (disposed laterally adjacent to and insulated from the floating gate) and a second portion (that extends up and over the floating gate and terminates in a second end that is disposed vertically over and insulated from the floating gate), wherein *"the first and second ends are disposed laterally adjacent to and insulated from each other such that no portion of the control gate is disposed directly between the floating gate and the source region."*

The Examiner relies on Fig. 6 of Taketa (which is shown below).



This figure clearly shows that the portions of source electrode 14 and control gate electrode 9 of Taketa that extend up and over the floating gate do not terminate in first and second ends respectively that are "laterally adjacent to and insulated from each other". Instead, these ends are vertically disposed relative to each other. Moreover, the upper portion of the control gate electrode 9 does in fact extend directly between the floating gate electrode 32 and the source electrode 14. Thus, it is submitted that amended claim 27 is not anticipated by Taketa.

Regarding independent claim 39, this claim was similarly amended to recite that the first and second ends (of the source region and control gates, respectively) are disposed laterally adjacent to and insulated from each other "*such that there is no vertical overlap between the control gate and the source region*". Figure 6 of Taketa clearly shows that the upper ends of control gate electrode 9 and source electrode 14 are not laterally adjacent each other, and that the control gate electrode and source electrode do indeed vertically overlap each other. Thus, Taketa does not anticipate claim 39.

Claims 28-30, 37, and 40-41 all depend from claims 27 or 39, and are therefore considered allowable for the reasons set forth above. Additionally, Taketa fails to teach the elements of these amended claims. For example:

i) Amended claims 30 and 41 recite insulation material disposed directly between the floating gate and the second end (of the control gate second portion), and "*having a thickness permitting Fowler-Nordheim tunneling of charges therethrough*". In contrast, Taketa teaches FN tunneling from the tip of floating gate electrode 32, through insulator film 8, and to the adjacent portion of the control gate 9 (see Col. 9, lines 36-42; and arrow A in Fig. 1), not from the upper end of control gate 9, and through both insulator films 19 and 8 (which together are shown with a much greater thickness than just the layer 8 that is taught as permitting FN tunneling).

ii) Amended claim 37 recites insulation material disposed directly between the first end (of the source region upper portion) and the floating gate, and "*having a thickness for permitting voltage coupling therebetween.*" In contrast, Taketa teaches extending the conductive control gate between the upper end of the source region and the

floating gate. Moreover, Taketa actually teaches away from voltage coupling between the source region upper end and the floating gate by disposing a conductive element (i.e. the control gate) therebetween.

For these reasons, it is respectfully submitted that claims 27-30, 37 and 39-41 as amended are not anticipated by Taketa.

2. Rejection of Claims 31-36, 38 and 42-45 Under § 103(a)

Claims 31-36, 38 and 42-45 were rejected under 35 U.S.C. 103(a) as being unpatentable over Taketa in view of USP 6,211,547 (Kao).

Claim 31 recites memory cell pairs formed with the same essential features as the memory device recited in claim 27, namely that the first and second ends of the control gates and source regions are "*laterally adjacent to and insulated from*" each other, such that "*no portion of the control gates is disposed directly between the floating gates and the source region*". Therefore, for the reasons set forth above in Part 1 with respect to claim 27, it is respectfully submitted that Taketa fails to teach or suggest the memory device array as recited in claim 31. Furthermore, it is submitted that the addition of Kao does not appear to remedy the deficiencies of the Taketa reference.

Claim 42 recites memory cell pairs formed with the same essential features as the memory device recited in claim 39, namely that first and second ends (of the source region and control gates, respectively) are disposed "*laterally adjacent to and insulated from*" each other "*such that there is no vertical overlap between the control gate and the source region*". Therefore, for the reasons set forth above in Part 1 with respect to claim 39, it is respectfully submitted that Taketa fails to teach or suggest the memory device array as recited in claim 42. Furthermore, it is submitted that the addition of Kao does not appear to remedy the deficiencies of the Taketa reference.

Claims 32-36, 38, and 43-45 all depend from claims 31 or 42, and are therefore considered allowable for the reasons set forth above. Additionally, Taketa fails to teach or suggest the elements of these amended claims. For example, claims 35 and 45 are deemed

allowable for the reasons set forth above in Part 1 with respect to claims 30 and 41. Likewise, claims 38 and 44 are deemed allowable for the reasons set forth above in Part 1 with respect to claim 37. The addition of Kao does not appear to remedy the deficiencies of the Taketa reference.

For these reasons, it is respectfully submitted that claims 31-36, 38 and 42-45 as amended are not rendered obvious by Taketa and Kao.

For the foregoing reasons, it is respectfully submitted that the claims are in an allowable form, and action to that end is respectfully requested.

Respectfully submitted,

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